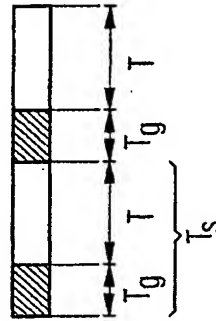
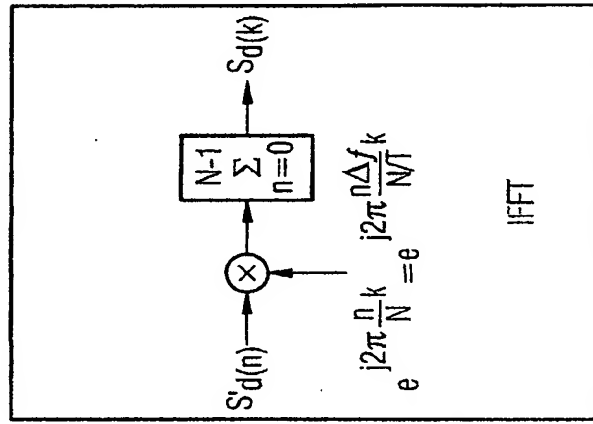
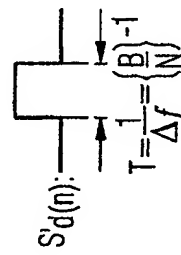


1/7

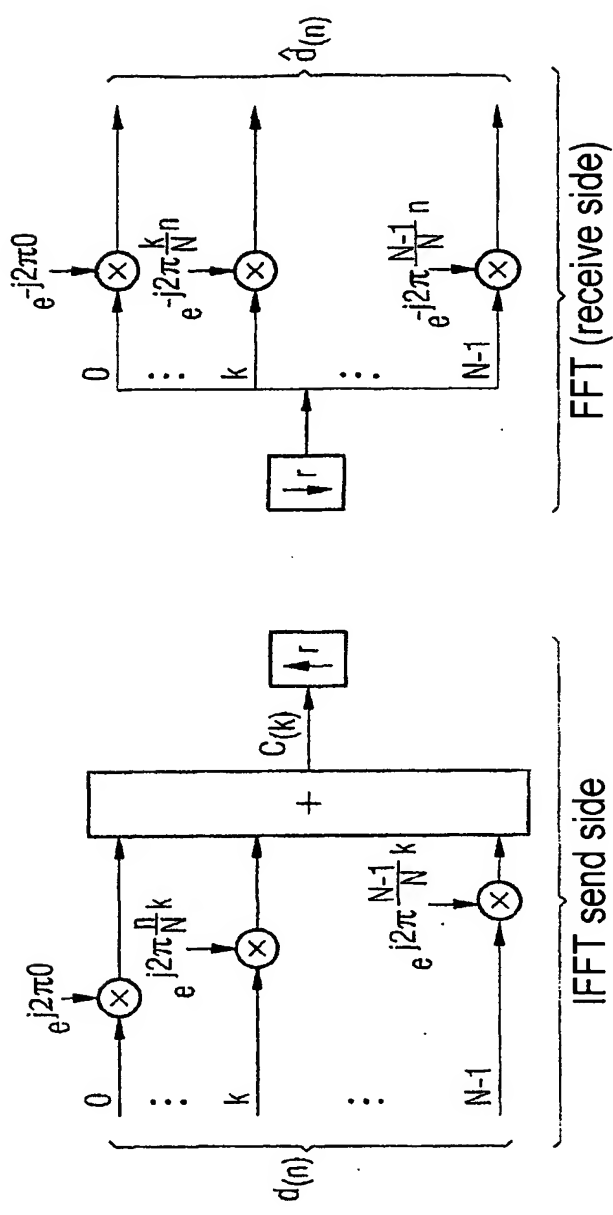
FIG 1A Prior art

$$\forall k \in [0; N-1]:$$



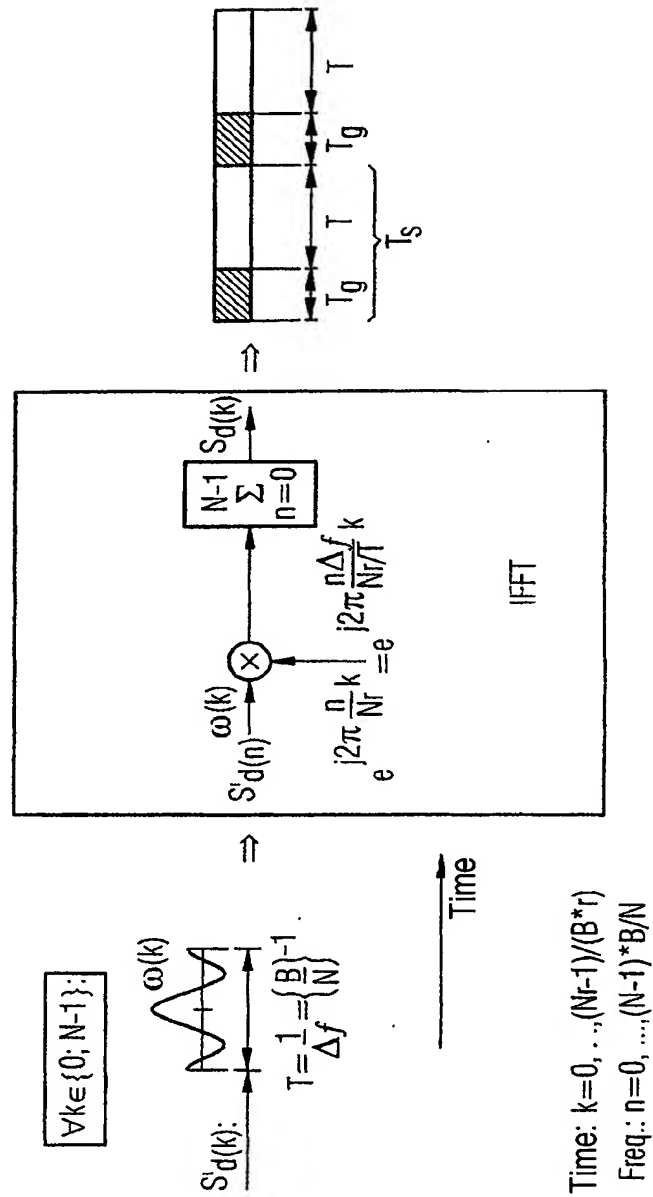
Zeit: $k=0, \dots, (N-1)/B$
 Freq.: $n=0, \dots, (N-1) \cdot B/N$

FIG 1B Prior art



Time: $k=0, \dots, (N-1)/B$
 Freq.: $n=0, \dots, (N-1)*B/N$

FIG 2A



Time: $k=0, \dots, (Nr-1)/(B^*r)$
 Freq.: $n=0, \dots, (N-1)^*B/N$

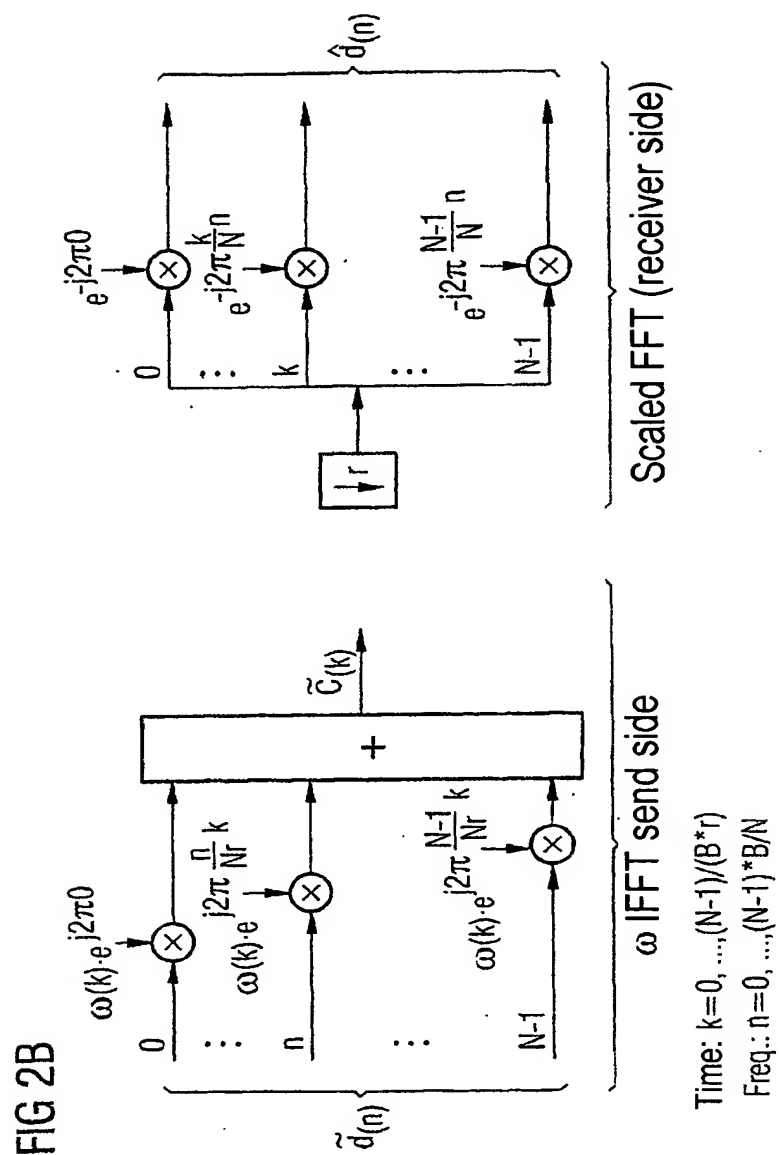


FIG 2C
OFDMA in uplink

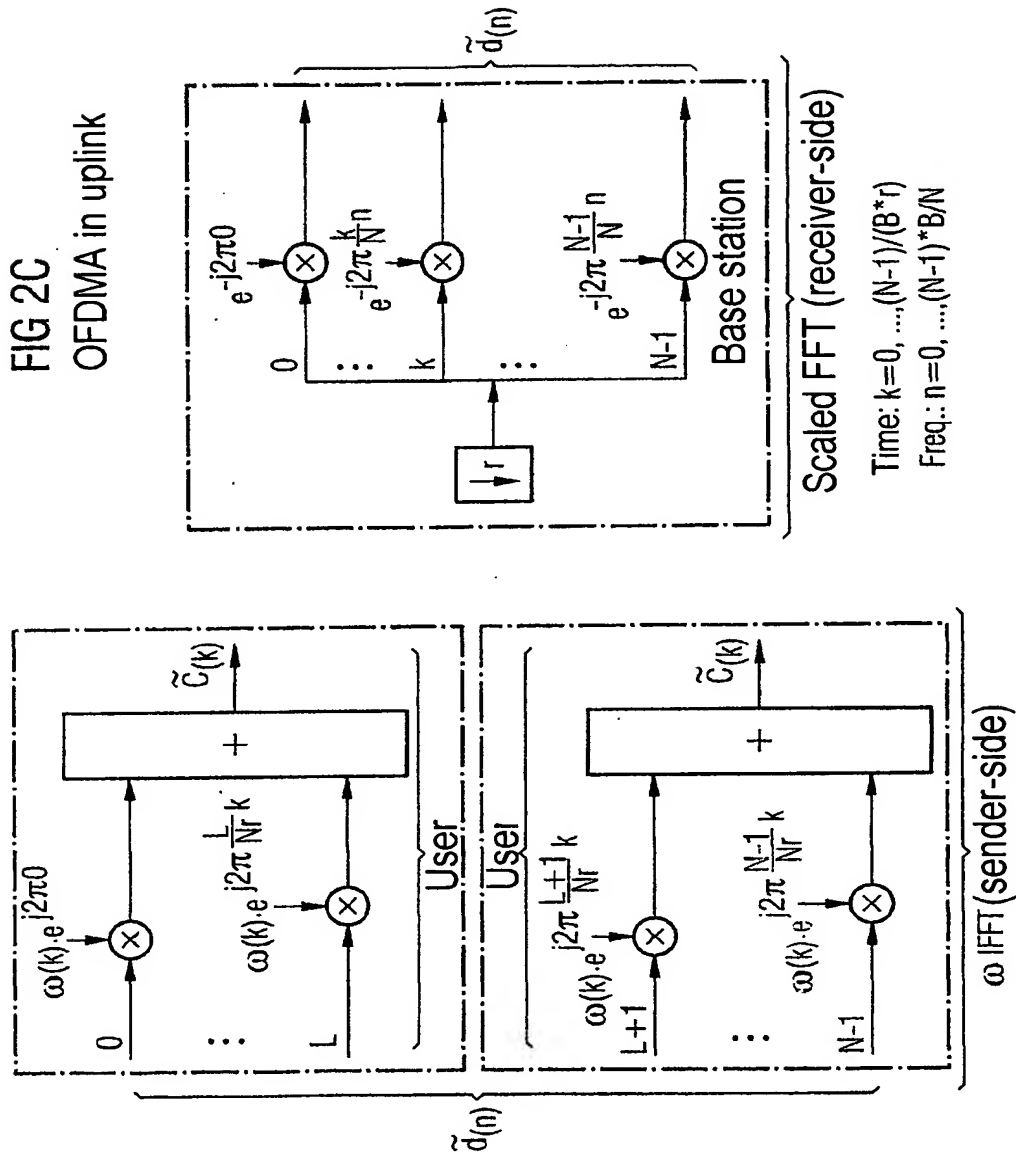
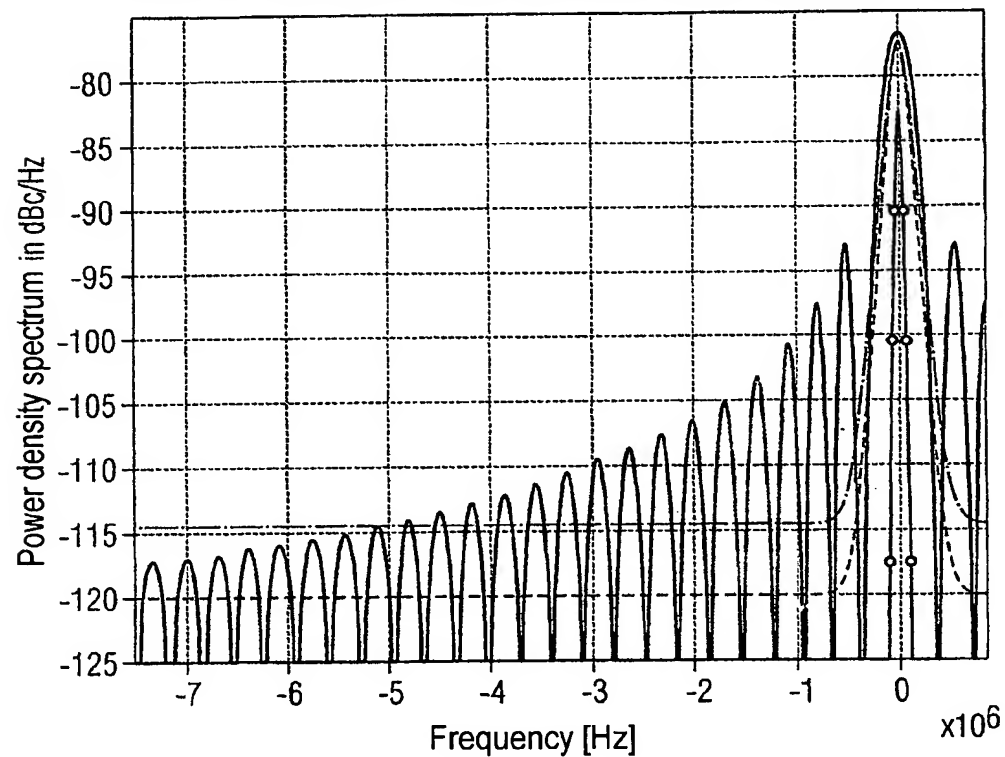


FIG 3A

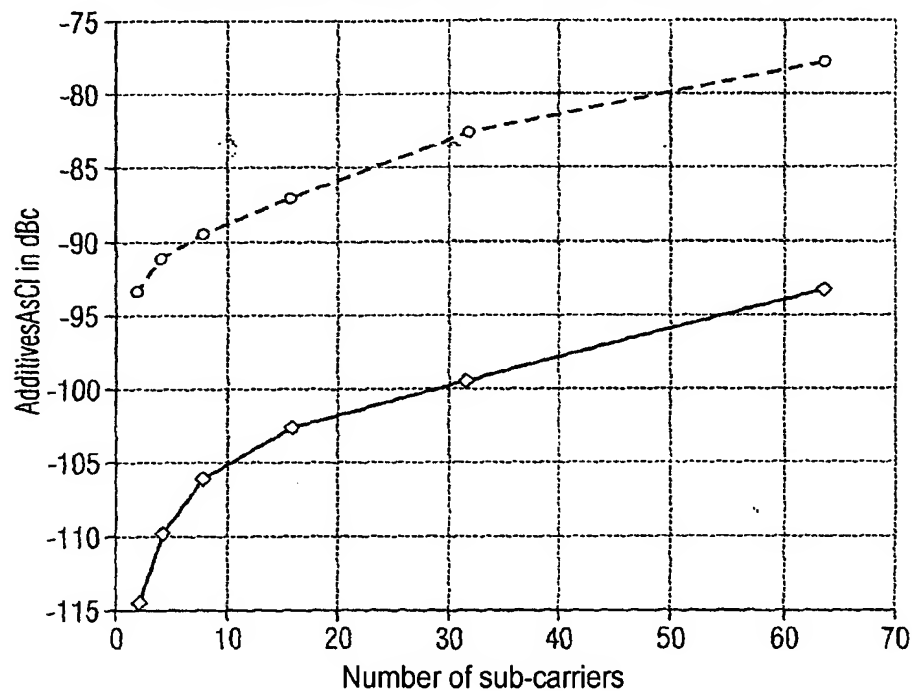
Power density spectrum with 20 MHz; subcarrier spacing = 312.5 K



- PSD mask
- PSD auto correlation function of the power density spectrum
- PSD power density spectrum with modified subcarrier with $N_{FFT}=4$; oversampling rate=256
- PSD power density spectrum of the original subcarrier with $N_{FFTmax}=64$; oversampling rate=16

FIG 3B

(Inter channel Interference)
 AsCi with sub-carrier position = MaxNumbCoeffs=1024



--○-- OFDM Power -80dBc f1=50 kHz f2=500 kHz

—◇— Mod. OFDM Power -80dBc f1=50 kHz f2=500 kHz

Size of the FFT: 2 4 8 16 32 64

Sampling rate: 512 256 128 64 32 16

Window size: 512 512 512 512 512 512

Gains: 21.3154 18.7443 16.5869 15.7136 16.5708 15.3561 dB

Note: For perfect reconstruction ($N_{FFT} \leq \text{oversampling rate}$) must apply!!!

Note: $N_{FFT}=4$; Oversampling rate=256

Note: For perfect reconstruction the Nyquist criterion must be adhered to !!!